Gamification for healthcare programs: techniques, methods and cases to enhance the user experience and increase engagement

Santiago Hors
santiagohors@salumedia.com
@sanhorfra
Law of attrition

Consolvo S. et al. Flowers or a robot army?: encouraging awareness & activity with personal, mobile displays. Proceedings of the 10th international conference on Ubiquitous computing, 54-63
What is gamification?

Usage of game techniques in non-game environments to promote a behavioural change.
Know what motivates your player
Types of players (Bartle’s edition)

- Killers
- Achievers
- Socializers
- Explorers

Richard Bartle, *Designing Virtual Worlds*

Image taken from: digitalbeards.community.uaf.edu
Game techniques (Yu-Kai Chou)
Looking for the flow!

Csíkszentmihályi’s Flow

- High Anxiety
- Low Worry
- Low Apathy
- High Boredom
- Low Relaxation
- High Flow

Challenge level

Low

Skill level

High

Image taken from: business2community.com
Rewards?

Intrinsic motivation

Extrinsic motivation

Overjustification
Examples for healthcare professionals
## Trivifarma

**15th Feb - 15th May 2014**

<table>
<thead>
<tr>
<th>Trivifarma app</th>
<th>vs</th>
<th>Health 2.0 app</th>
</tr>
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<tbody>
<tr>
<td>282 Downloads</td>
<td>221</td>
<td></td>
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<tr>
<td>2433 Sessions</td>
<td>1607</td>
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<tr>
<td>54 secs Avg. time per session</td>
<td>42 secs</td>
<td></td>
</tr>
</tbody>
</table>

+28% More downloads
+51% More sessions
+29% More avg. time per session
Septris, by Stanford Medicine

Will

Temp: 101.1F, 38.4C
BP: 93/44
HR: 137
RR: 27
UO: 0.3 cc/kg/hr

History and Physical:
Gender: Male
Age: 59
Chief Complaint: "I am having trouble breathing."
History of Present Illness:
The patient has a history of COPD with a recent hospitalization for exacerbation within the last month. Fever, shortness of breath, and cough developed three days ago. Sputum production is dark green. He has forgotten to take his COPD inhalers.
Past Medical History:
Hypertension, diabetes.
Prognosis: Clinical case simulation

+600 cases  30 specialities  195 countries  +3M downloads
Examples for patients, the real deal
Crowdsourcing: FoldIt & Malaria Spot

1 month, 95 countries
+12,000 games
+270,000 clicks on the test images.
22 games from nonexpert players
accuracy higher than 99%. ~ 13
games from players trained for 1 minute.

Luengo-Oroz, MA. et al.
Sjekkdeg: STD awareness website

20.9 pages in avg
5:52 minutes (7:01)
36.7% new visitors
5.6 % bouncing rate (3.1%)


Gabarron, E. et al. Avatars using computer/smartphone mediated communication and social networking in prevention of sexually transmitted diseases among North-Norwegian youngsters. BMC Medical Informatics and Decision Making 12 (1), 120
Virtual Rehab
ReMission

For the future...

SmokeFreeBrain: smoking cessation intervention based on adherence to physical activity with ICT support (App Gamification, Facebook and SMS)

CHESS: examine how gamification techniques could improve Multiple Sclerosis patient adoption of CH solutions.
Thank you!

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